

FIG. 1

ROOT DIRECTORY 1450

SUB DIRECTORY 1451

REWRITABLE TITLE SET RW_VTS 1452
(DVD_RTR DIRECTORY)

RTR=REAL TIME RECORDING

DATA FILES 1453

CONTROL INFORMATION 1011

=RW_VIDEO_CONTROL.IFO (RTR.IFO)

BACKUP OF CONTROL INFO.

=RW_VIDEO_CONTROL.BUP

AV FILE 1401 (RTR DATA)

=RW_OBJECT.OB

VIDEO OBJECT (RTR_MOV.VRO) 1012

PICTURE OBJECT (RTR_ST0.VRO) 1013

AUDIO OBJECT (RTR_STA.VRO) 1014

THUMBNAIL OBJECT 1016

REWRITABLE ADDITIONAL INFO. 1454

=RW_ADD.DAT

SUB DIRECTORY 1451

VIDEO TITLE SET VIDEO_TS (OR VTS) 1455

AUDIO TITLE SET AUDIO_TS (OR ATS) 1456

SUB DIRECTORY FOR COMPUTER DATA STORAGE 1457

FIG. 2

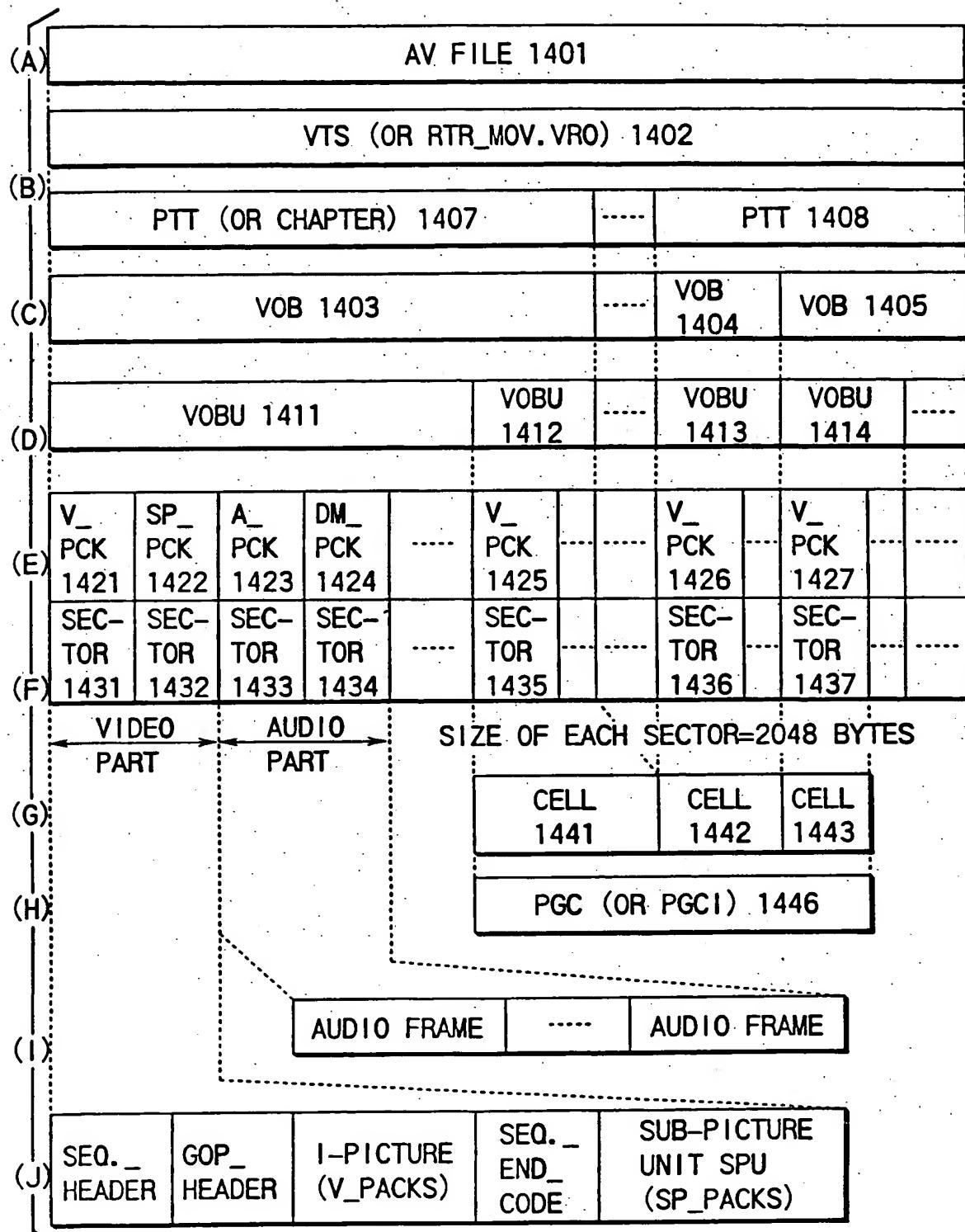


FIG. 3

AV FILE 1401					
VOB #3 (1) 1463	VOB #1 1461	VOB #3 (2) 1464	VOB #2 1462	UNRECORDED AREA 1460	VOB #3 (3) 1465
EXTENT $\# \gamma$ 1473	EXTENT $\# \alpha$ 1471	EXTENT $\# \delta$ 1474	EXTENT $\# \beta$ 1472	EXTENT $\# \zeta$ 1470	EXTENT $\# \epsilon$ 1475
					LSNg
					LSNf+1
					LSNf
					LSNe+1
					LSNe
					LSNd+1
					LSNd
					LSNc+1
					LSNc
					LSNb+2
					LSNb+1
					LSNb
					LSNa+2
					LSNa+1

→ SMALLER LOGICAL SECTOR NUMBER (LSN)
 ← INNER SIDE OF OPTICAL DISC 1001

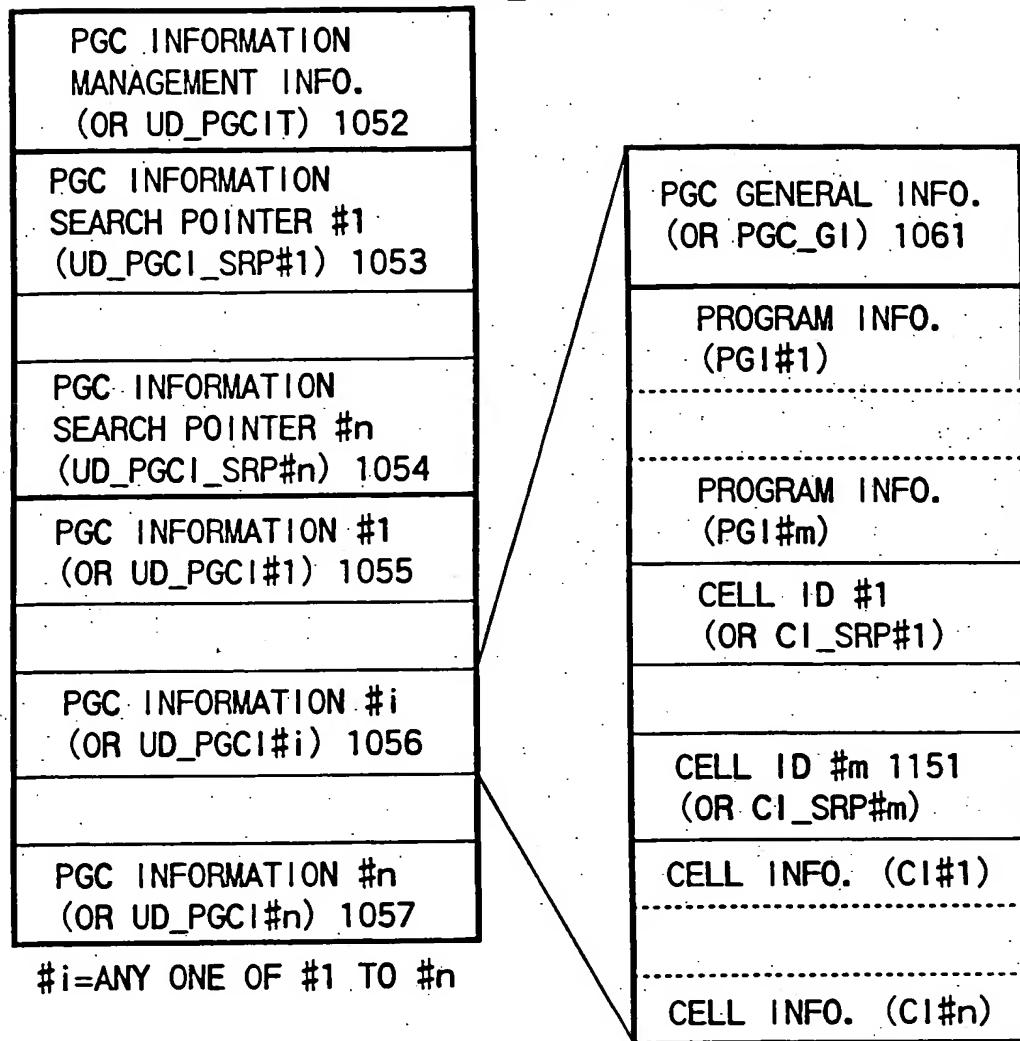
LARGER LOGICAL SECTOR NUMBER (LSN) →
 OUTER SIDE OF OPTICAL DISC 1001 →

FIG. 4

CONTENTS OF ALLOCATION MAP TABLE 1105	NUMBER OF EXTENTS IN UNRECORDED AREA 1601	1
DISTRIBUTION INFORMATION OF POSITIONS OF UNRECORDED AREA 1621	1ST ADR. (LSN) OF 1ST EXTENT IN UNRECORDED AREA 1606	e-a
DISTRIBUTION INFORMATION OF POSITIONS OF RECORDED DATA AS TO VOB #1 1622	SIZE (SECTORS) OF 1ST EXTENT IN UNRECORDED AREA 1614	f-e
DISTRIBUTION INFORMATION OF POSITIONS OF RECORDED DATA AS TO VOB #2 1623	NUMBER OF EXTENTS IN VOB #1 1602	1
DISTRIBUTION INFORMATION OF POSITIONS OF RECORDED DATA AS TO VOB #3 1624	1ST ADR. (LSN) OF 1ST EXTENT IN VOB #1 1607	b-a
	SIZE (SECTORS) OF 1ST EXTENT IN VOB #1 1615	c-b
	NUMBER OF EXTENTS IN VOB #2 1603	1
	1ST ADR. (LSN) OF 1ST EXTENT IN VOB #2 1608	d-a
	SIZE (SECTORS) OF 1ST EXTENT IN VOB #2 1616	e-d
	NUMBER OF EXTENTS IN VOB #3 1604	3
	1ST ADR. (LSN) OF 1ST EXTENT IN VOB #3 1609	1
	SIZE (SECTORS) OF 1ST EXTENT IN VOB #3 1617	b-a
	1ST ADR. (LSN) OF 2ND EXTENT IN VOB #3 1610	c-a
	SIZE (SECTORS) OF 2ND EXTENT IN VOB #3 1618	d-c
	1ST ADR. (LSN) OF 3RD EXTENT IN VOB #3 1611	f-a
	SIZE (SECTORS) OF 3RD EXTENT IN VOB #3 1619	g-f

FIG. 5

PGC CONTROL INFO. (OR UD_PGCIT) 1103



- *1> PGC INFORMATION (OR UD_PGC1) CAN DEFINE A GROUP OF ONE OR MORE PROGRAMS;
- *2> EACH PROGRAM CAN BE FORMED OF ONE OR MORE CELLS;
- *3> EACH CELL CAN BE SPECIFIED BY CELL ID (OR CI_SRP);
- *4> EACH CELL ID (OR CI_SRP) CAN INDICATE POSITION (OR START ADDRESS) OF CELL INFORMATION (OR CI);
- *5> EACH CELL INFORMATION (OR CI) CAN DETERMINE START TIME AND END TIME OF PRESENTATION OF CELL

FIG. 6

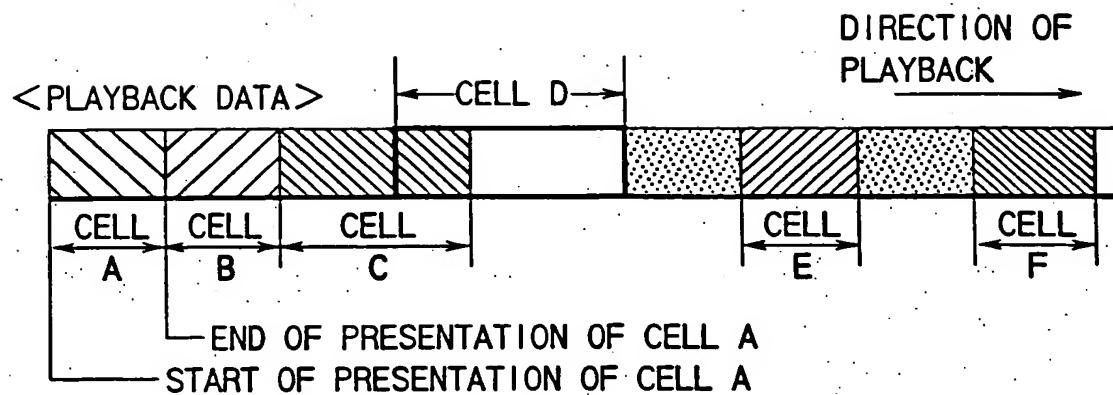


FIG. 7A

PGC INFORMATION (PGCI)

PGC#1 1081		PGC#2 1082		PGC#3 1083	
NUMBER OF CELLS=3		NUMBER OF CELLS=3		NUMBER OF CELLS=5	
#1	CELL A	#1	CELL D	#1	CELL E
#2	CELL B	#2	CELL E	#2	CELL A
#3	CELL C	#3	CELL F	#3	CELL D
—	—	—	—	#4	CELL B
—	—	—	—	#5	CELL E
CELL ID	CELL INFO.	CELL ID	CELL INFO.	CELL ID	CELL INFO.
CI_SRP #m=3	CI #n=3	CI_SRP #m=3	CI #n=3	CI_SRP #m = 5	CI #n=4

FIG. 7B

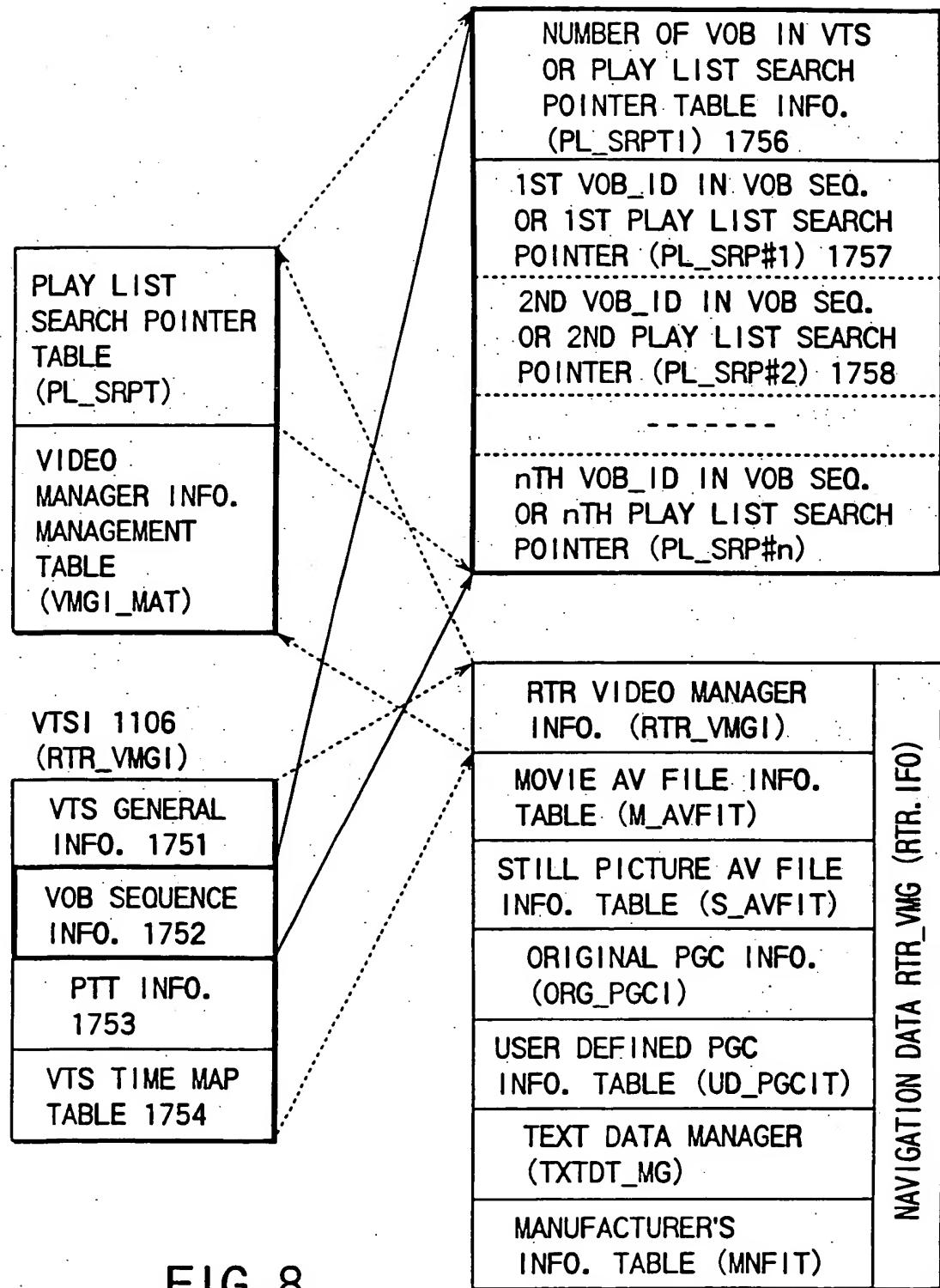


FIG. 8

FIG. 9A

AV FILE 1401

FIG. 9B

VTS (OR RTR_MOV. VRO) 1402

VOB#1 1461	VOB#2 1462		VOB#3 1763		UNRECORDED AREA 1460
EXTENT# α 1471	EXTENT# β 1472	EXTENT# γ 1473	EXTENT# δ 1474	EXTENT# ϵ 1475	EXTENT# ζ 1470

FIG. 9C

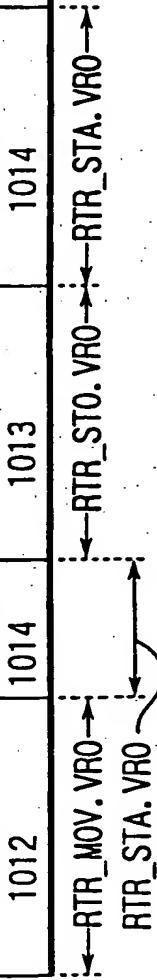
AV FILE 1401

FIG. 9E

VTS (OR RTR_MOV. VRO/RTR_ST0. VRO/RTR_STA. VRO) 1402

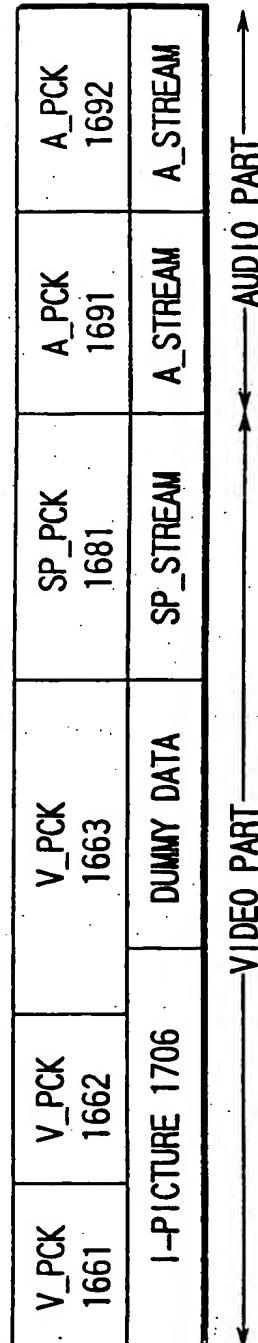
M_VOB#		S_VOG#							
VOB#A 1771	VOB#B 1772	VOB#C 1773	VOB#D 1774	VOB#E 1775	VOB#F 1776	VOB#G 1777	VOB#H 1778	VOB#I 1779	
VIDEO OBJECTS 1012	AUDIO OBJECTS 1014	PICTURE OBJECTS 1013	AUDIO OBJECTS 1014	AUDIO OBJECTS 1014	PICTURE OBJECTS 1013	AUDIO OBJECTS 1014	THUMBNAIL OBJECTS 1016	THUMBNAIL OBJECTS 1016	

FIG. 9F



VOB FOR PICTURE OBJECTS (OR STILL PICTURE VOB GROUP RELATING TO S_VOGI#) 1631

VOBU (FOR ONE STILL PICTURE) 1641



VOB FOR PICTURE OBJECTS (OR STILL PICTURE VOB GROUP RELATING TO S_VOGI#) 1632

VOBU(ONE STILL PICT.) 1642 VOBU 1643 VOBU 1644

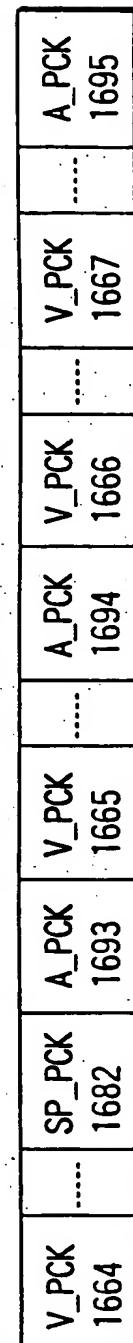


FIG. 10G VOB FOR PICTURE OBJECTS (OR STILL PICTURE VOB GROUP RELATING TO S_VOGI#) 1633

FIG. 10H VOBU (ONE STILL PICTURE) 1645

VOBU 1646

VOBU 1647

V_PCK	V_PCK	V_PCK	SP_PCK	V_PCK	V_PCK	V_PCK	V_PCK
1668	1669	1670	1683	1671	1672	1673	1674
I-PICTURE	1707	DUMMY	SP_STREAM	I-PICTURE	1708	DUMMY	I-PICTURE
1704	1704			1705			1709

VIDEO PART → ← VIDEO PART → ← VIDEO PART → ← VIDEO PART →

FIG. 10J VOB FOR PICTURE OBJECTS (OR STILL PICTURE VOB GROUP RELATING TO S_VOGI#) 1634

FIG. 10K VOBU (ONE STILL PICTURE) 1648

VOBU 1649

VOBU 1650

SP_PCK	A_PCK						
1684	1696	1697	1698	1699	1700	1701	1702

AUDIO PART → ← AUDIO PART → ← AUDIO PART → ← AUDIO PART →

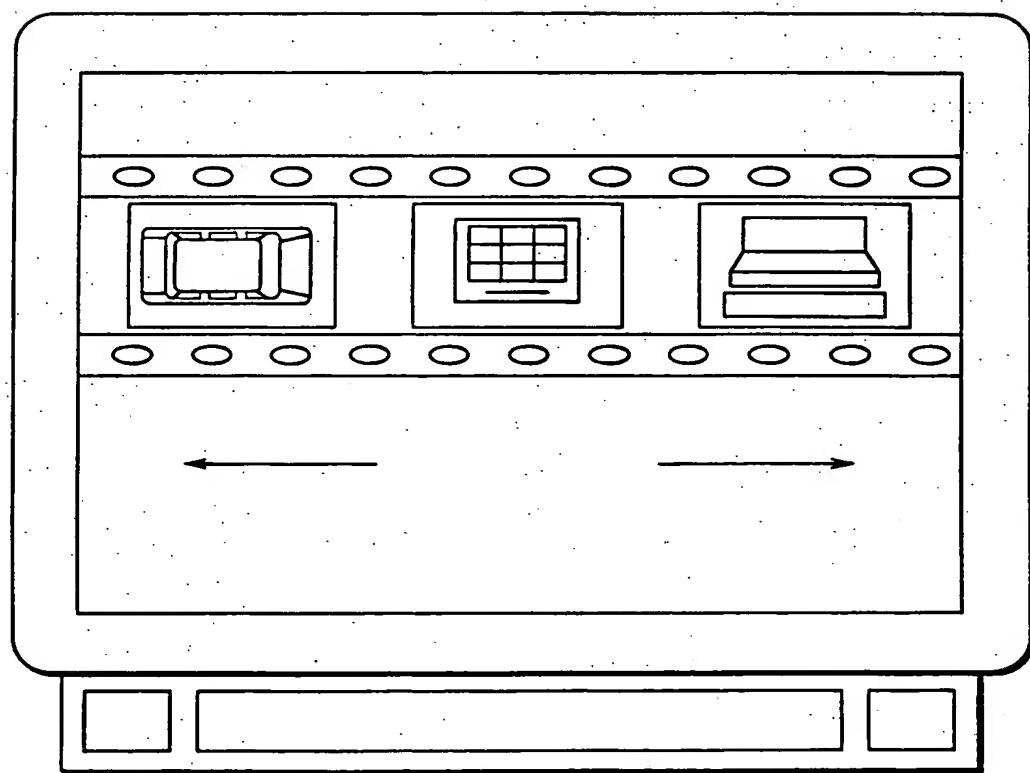


FIG. 11

STILL PICTURE
AV FILE
(S_AVFIT)

STILL PICTURE
AV FILE INFO.
TABLE INFO.
(S_AVFITI)

STILL PICT. VOB
STREAM INFO. #1
(S_VOB_STI#1)

STILL PICT. VOB
STREAM INFO. #n
(S_VOB_STI#n)

STILL PICTURE
AV FILE INFO.
(S_AVFI)

STILL PICT. AD-
DITIONAL AUDIO
STREAM INFO. #1
(S_AA_STI#1)

STILL PICT. AD-
DITIONAL AUDIO
STREAM INFO. #m
(S_AA_STI#m)

STILL PICTURE
ADDITIONAL
AUDIO FILE INFO.
(S_AAFI)

VOB INFO. FOR
PICT. OBJECTS
MANAGEMENT
INFO. 1721
(OR S_AVFI_G1)

SEARCH POINTER
OF VOB INFO. FOR
PICT. OBJECTS
#1 1726 (OR
S_VOGI_SRP#1)

SEARCH POINTER
OF VOB INFO. FOR
PICT. OBJECTS
#i 1727 (OR
S_VOGI_SRP#i)

SEARCH POINTER
OF VOB INFO. FOR
PICT. OBJECTS
#k 1728 (OR
S_VOGI_SRP#k)

VOB INFO. FOR
PICT. OBJECTS
#1 1731
(OR S_VOGI#1)

VOB INFO. FOR
PICT. OBJECTS
#i 1732
(OR S_VOGI#i)

VOB INFO. FOR
PICT. OBJECTS
#k 1733
(OR S_VOGI#k)

VOB GENERAL
INFORMATION
FOR PICTURE
OBJECTS
1736 (OR
STILL PICTURE
VOB GROUP
GENERAL INFO.
S_VOG_G1)

VOB ATTRIB.
INFORMATION
FOR PICTURE
OBJECTS
1737

VOBU MAP FOR
PICTURE
OBJECTS
1738 (OR
STILL PICTURE
VOB ENTRES
S_VOB_ENT#)

FIG. 12 #i=ANY ONE OF #1 TO #k

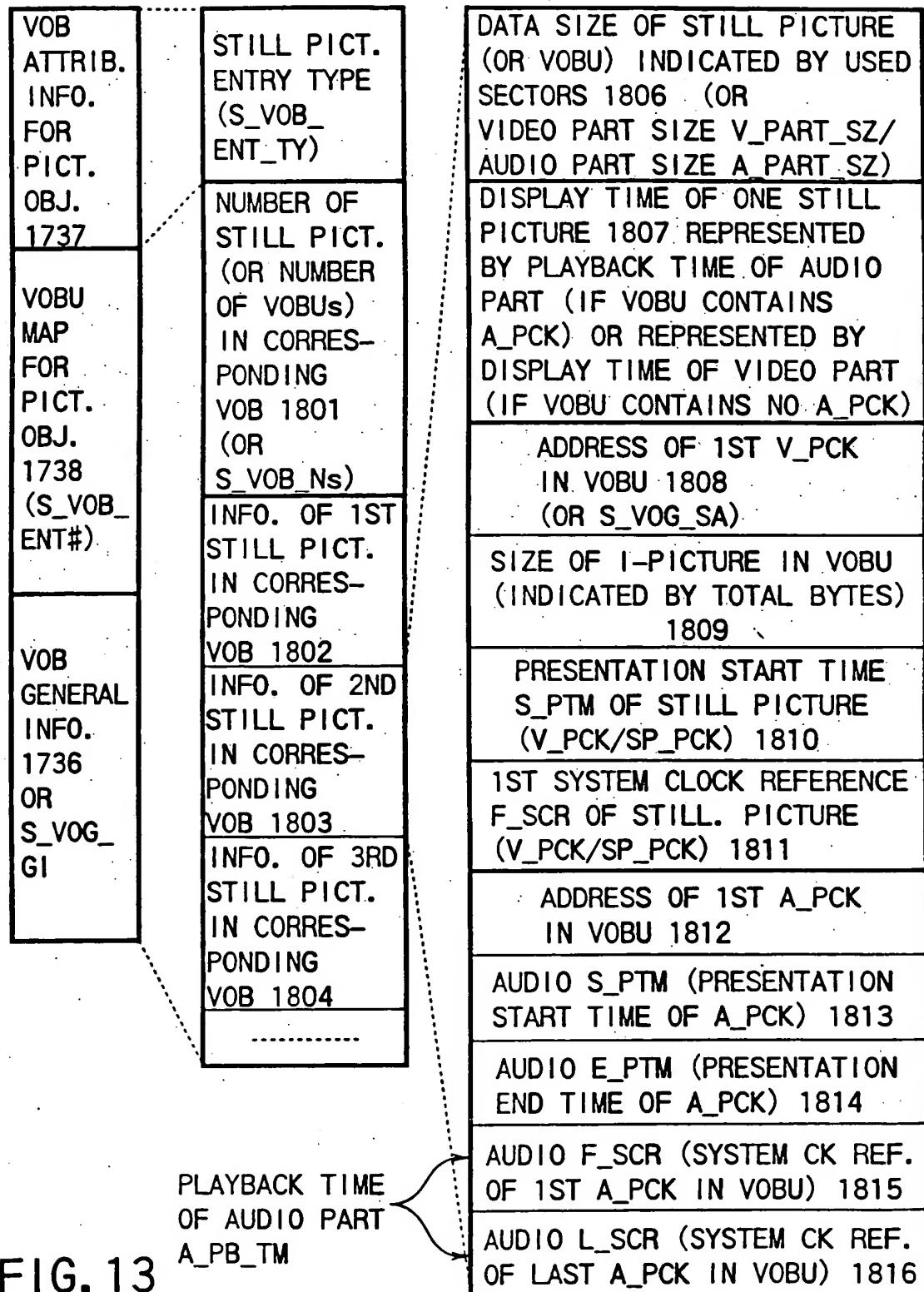


FIG. 13

FIG. 14A

VOB #A 1821

FIG. 14B

V0BU 1825	V0BU 1826	V0BU 1827
STILL PICT. NO. 1	STILL PICT. NO. 2	STILL PICT. NO. h

FIG. 14C

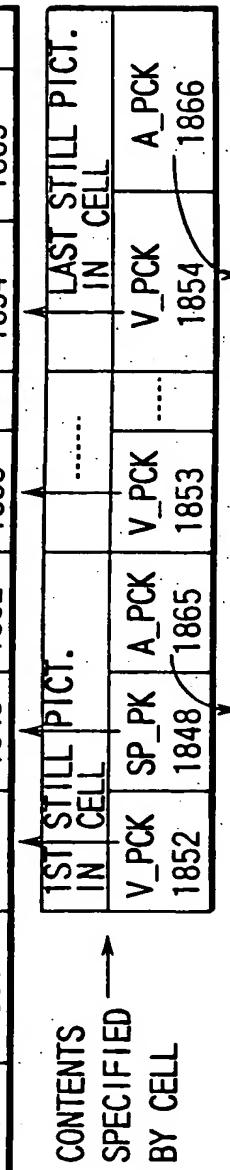


FIG. 14D

A_PCK	V_PCK	A_PCK	V_PCK	A_PCK	V_PCK
1864	1855	1865	1856	1857	1858
AUDIO	STLPCT	AUDIO	STLPCT	STLPCT	STLPCT
1844	1835	1845	1836	1837	1838

FIG. 14E

.....	STILL PICTURE NO. j	STILL PICTURE NO. h+j-2
.....	VOBU 1828	VOBU 1829

FIG. 14F

FIG. 14G

CONTENTS (S_CI) OF CELL PLAYBACK INFO. (CI) FOR PICTURE OBJECTS 1870	EXAMPLE 1871 WITH RESPECT TO FIG.14	EXAMPLE 1872 WITH RESPECT TO FIG.14
CELL ID (CI_SR_P) 1873	_____	_____
TYPE INFORMATION OF CELL (C_TY) 1880	_____	_____
ID INFORMATION OF VOB WITH V_PCK 1874	VOB #A	1821
STILL PICT. NUMBER 1875 IN VOB INCLUDING V_PCK OF 1ST STILL PICTURE IN CELL (S_S_VOB_ENTN)	2	1826
STILL PICT. NUMBER 1876 IN VOB INCLUDING V_PCK OF LAST STILL PICTURE IN CELL (E_S_VOB_ENTN)	h	1827
ID INFORMATION OF VOB WITH A_PCK 1877	VOB #B	1822
STILL PICT. NUMBER 1878 IN VOB INCLUDING A_PCK OF 1ST STILL PICTURE IN CELL	j	1828
PRESENTATION TIME 1879 OF EACH STILL PICTURE HAVING NO CORRESPONDING A_PCK	2 SECONDS (ONE LINE)	_____

FIG.15

CONTENTS OF CELL PLAYBACK INFO. (CI) FOR PTT
CELL ID (CI_SRP) 1883
TYPE INFO. OF CELL (C_TY) 1882
ID INFO. OF PTT WITH V_PCK 1884
STILL PICTURE NUMBER 1885 IN PTT OF VOB INCLUDING V_PCK OF 1ST STILL PICTURE IN CELL
STILL PICTURE NUMBER 1886 IN PTT OF VOB INCLUDING V_PCK OF LAST STILL PICTURE IN CELL
ID INFO. OF PTT WITH A_PCK 1887
STILL PICTURE NUMBER 1888 IN PTT OF VOB INCLUDING A_PCK OF 1ST STILL PICTURE IN CELL
PRESENTATION TIME 1889 OF EACH STILL PICT. HAVING NO CORRESPONDING A_PCK

FIG. 16

STILL PICTURE AV FILE INFO.
(S_AVFI) FOR PTT (CHAPTER)

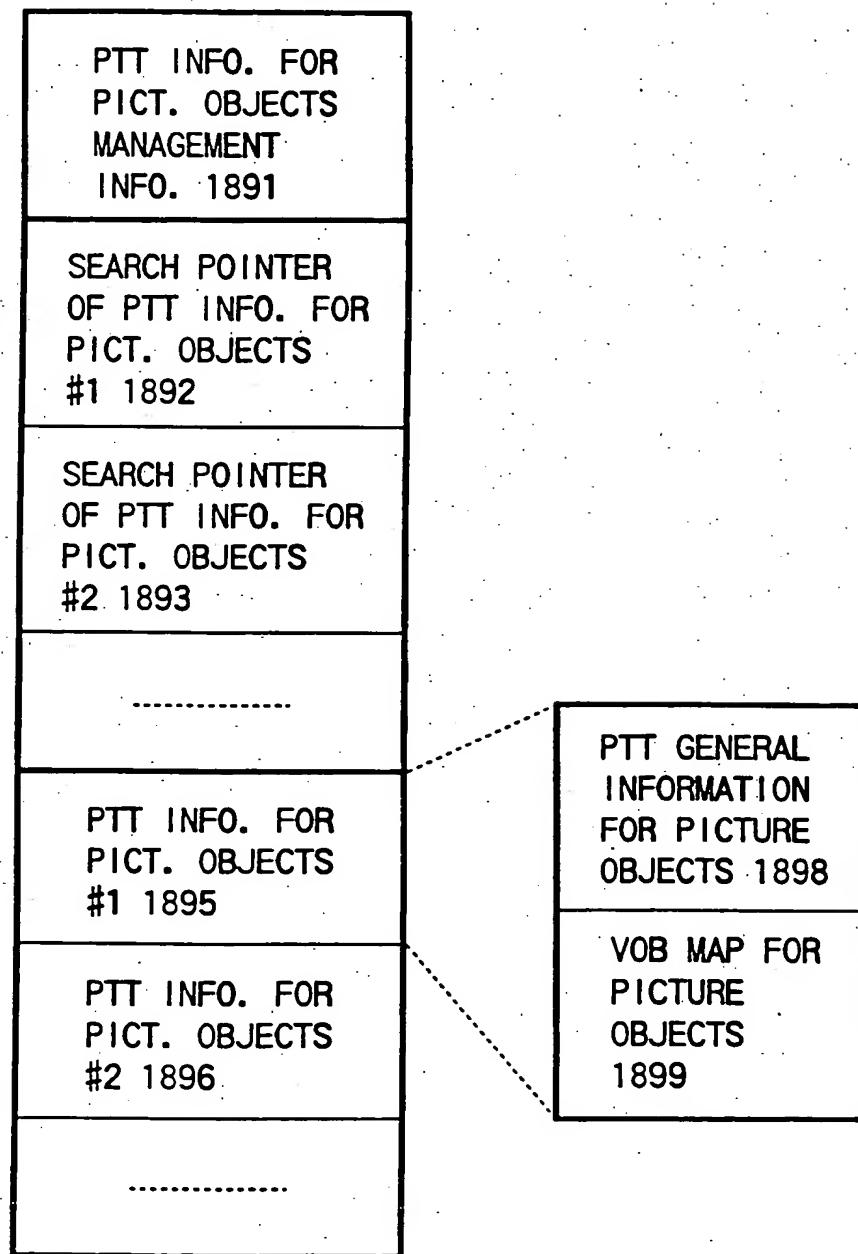


FIG. 17

VOB MAP FOR
PICT. OBJECTS
1899

NUMBER OF
STILL PICT.
(OR NUMBER
OF VOBs) IN
CORRESPONDING
PTT 1901
(OR S_VOB_Ns)

INFO. OF 1ST
STILL PICT. IN
CORRESPONDING
PTT 1902

INFO. OF 2ND
STILL PICT. IN
CORRESPONDING
PTT 1903

DATA SIZE OF STILL PICTURE
(OR VOB) INDICATED BY USED
SECTORS 1906

DISPLAY TIME OF ONE STILL
PICTURE 1907 REPRESENTED
BY PLAYBACK TIME OF AUDIO
PART (IF VOB CONTAINS
A_PCK) OR REPRESENTED BY
DISPLAY TIME OF VIDEO PART
(IF VOB CONTAINS NO A_PCK)

ADDRESS OF 1ST V_PCK
IN VOB 1908
(OR S_VOG_SA)

SIZE OF I-PICTURE IN VOB
(INDICATED BY TOTAL BYTES)
1909

PRESENTATION START TIME
S_PTm OF STILL PICTURE
(V_PCK/SP_PCK) 1910

1ST SYSTEM CLOCK REFERENCE
F_SCR OF STILL. PICTURE
(V_PCK/SP_PCK) 1911

ADDRESS OF 1ST A_PCK
IN VOB 1912

AUDIO S_PTm (PRESENTATION
START TIME OF A_PCK) 1913

AUDIO E_PTm (PRESENTATION
END TIME OF A_PCK) 1914

AUDIO F_SCR (SYSTEM CK REF.
OF 1ST A_PCK IN VOB) 1915

AUDIO L_SCR (SYSTEM CK REF.
OF LAST A_PCK IN VOB) 1916

FIG. 18

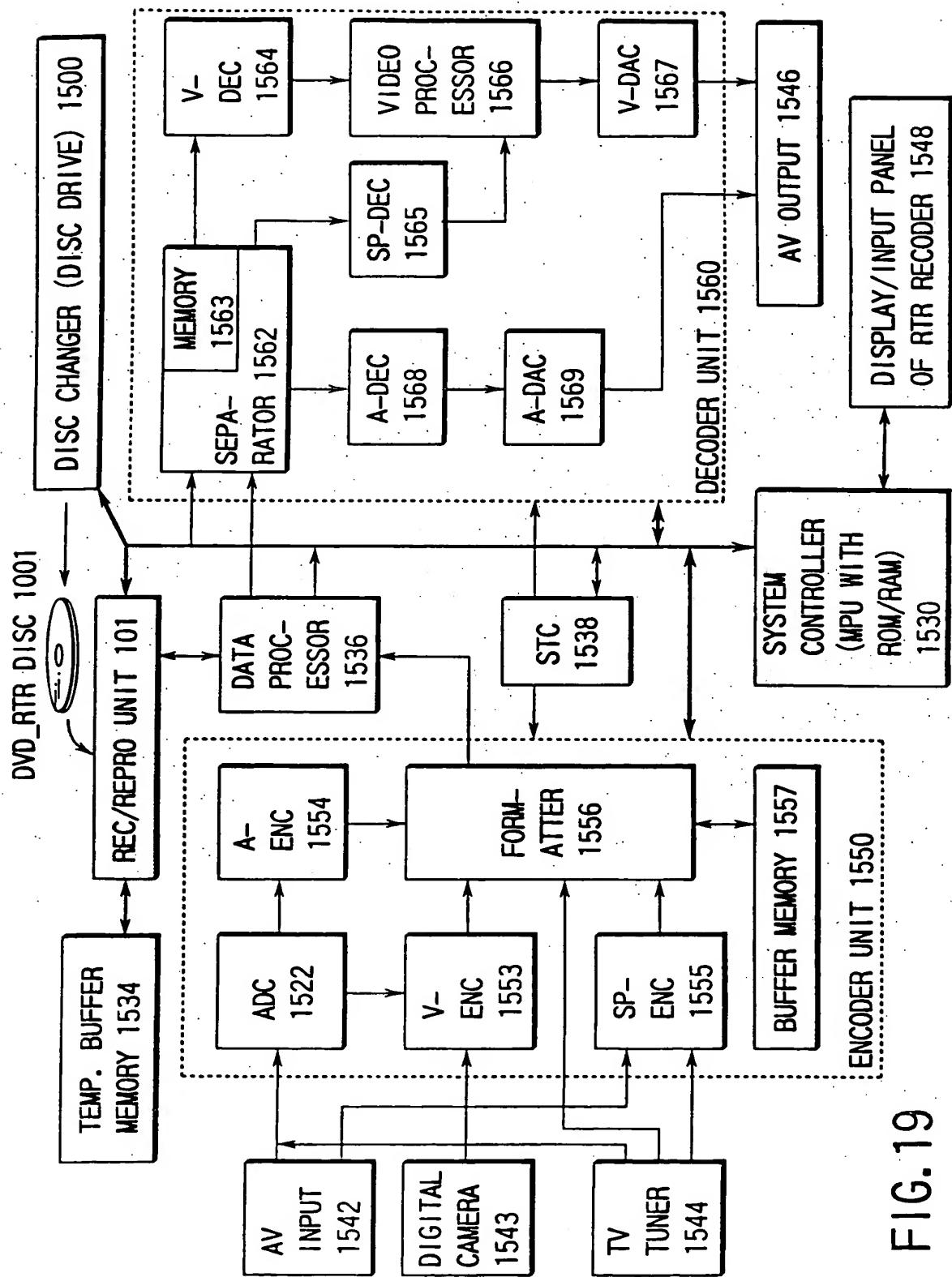


FIG. 19

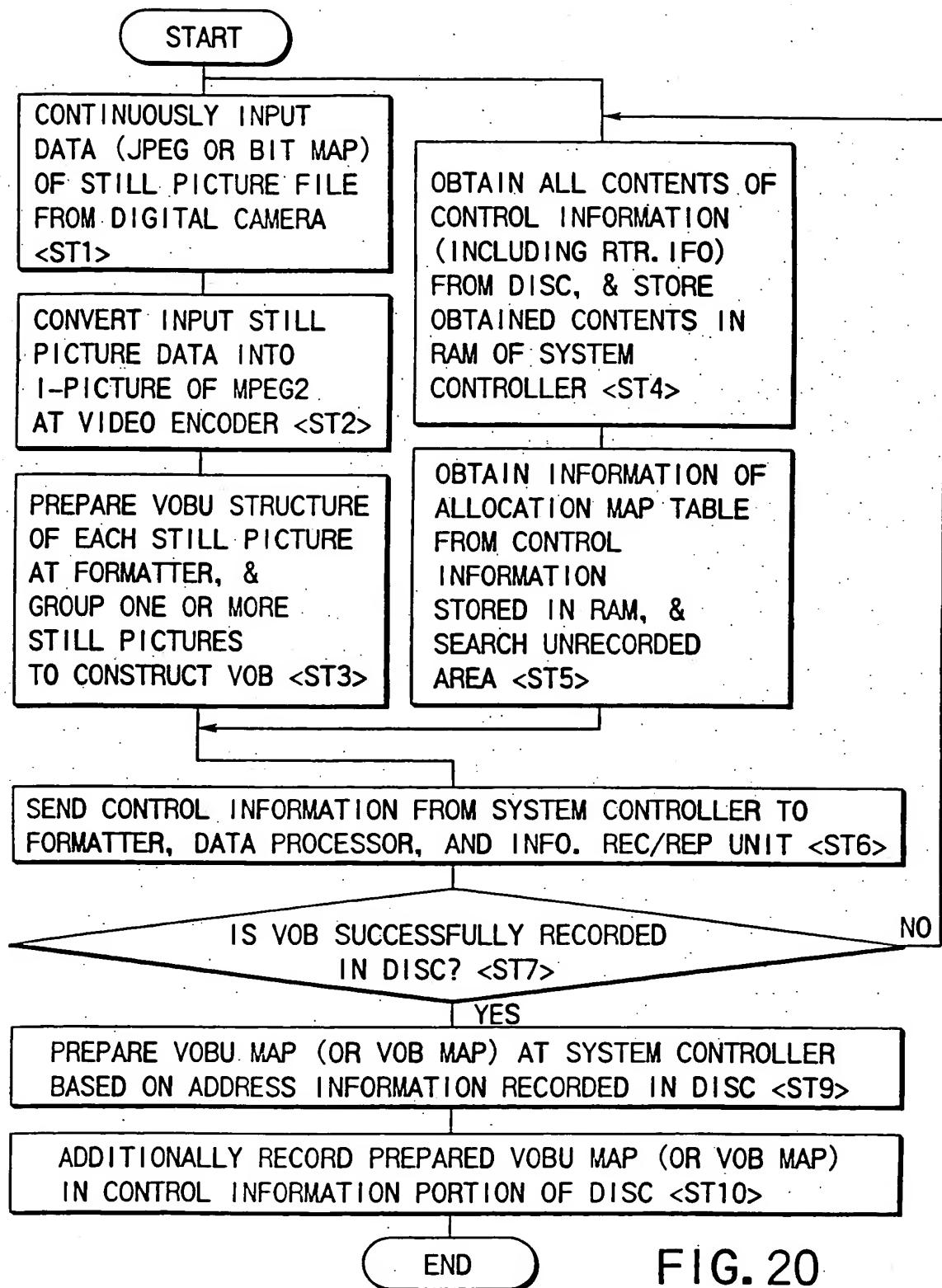


FIG. 20

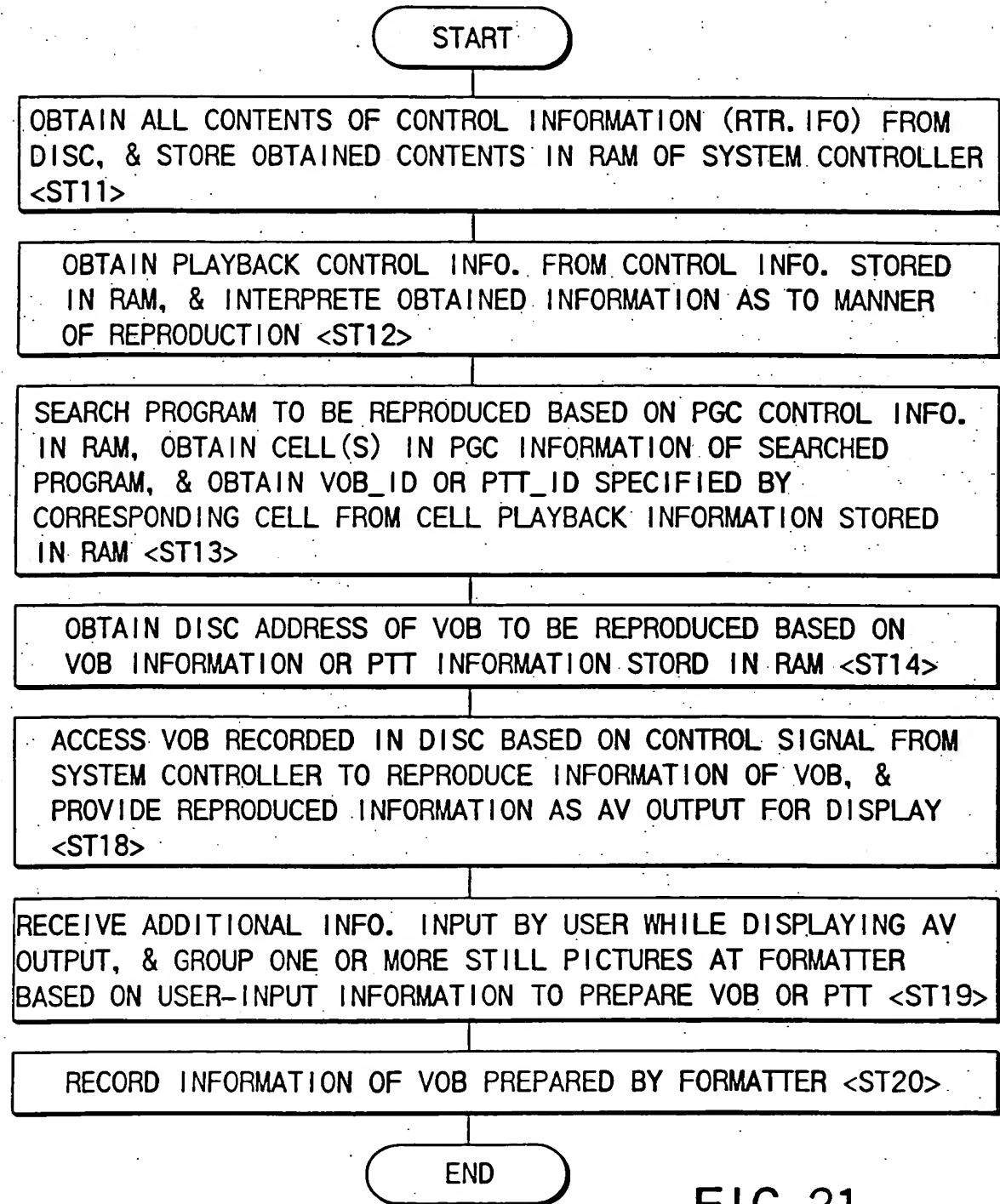


FIG.21

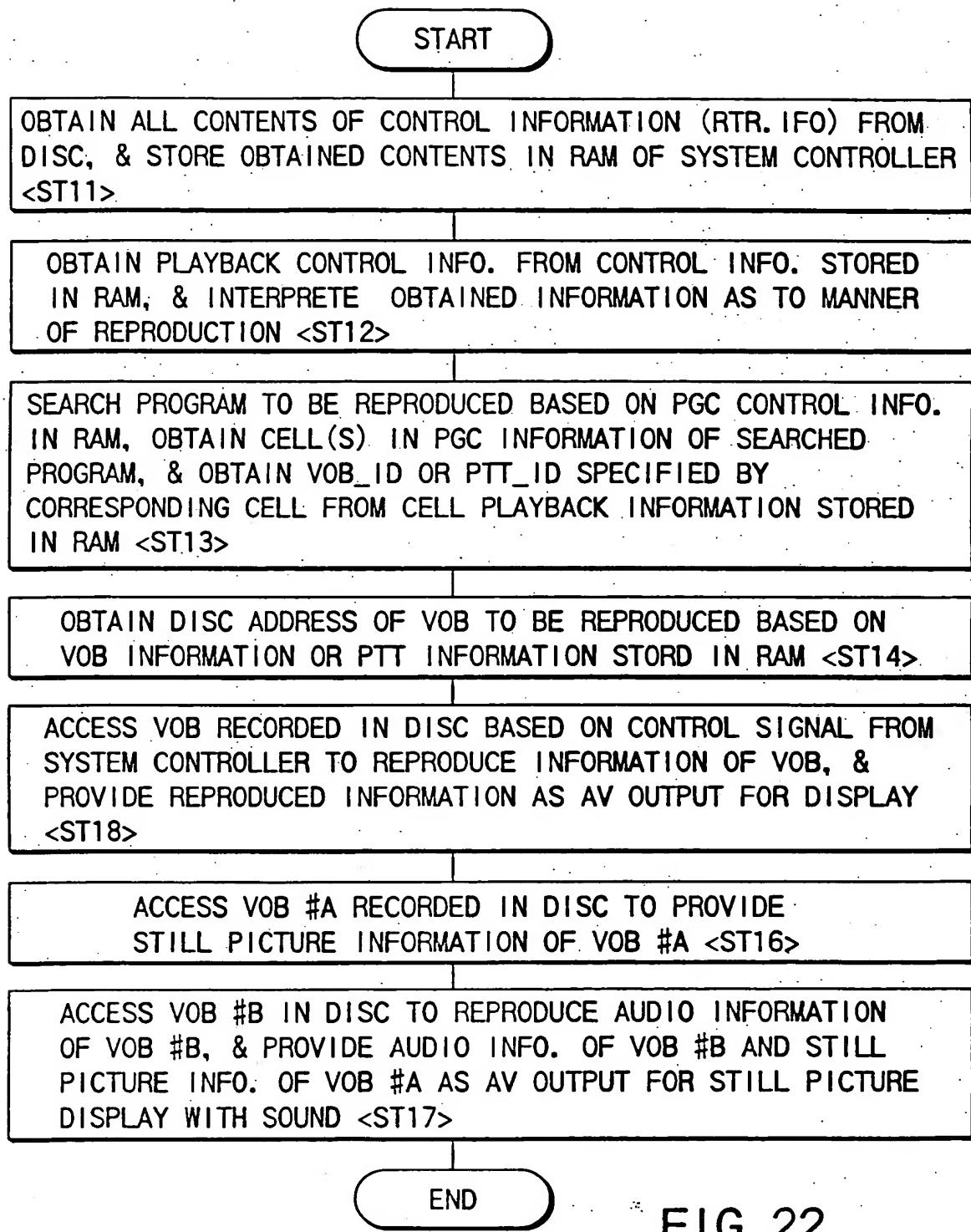


FIG. 22

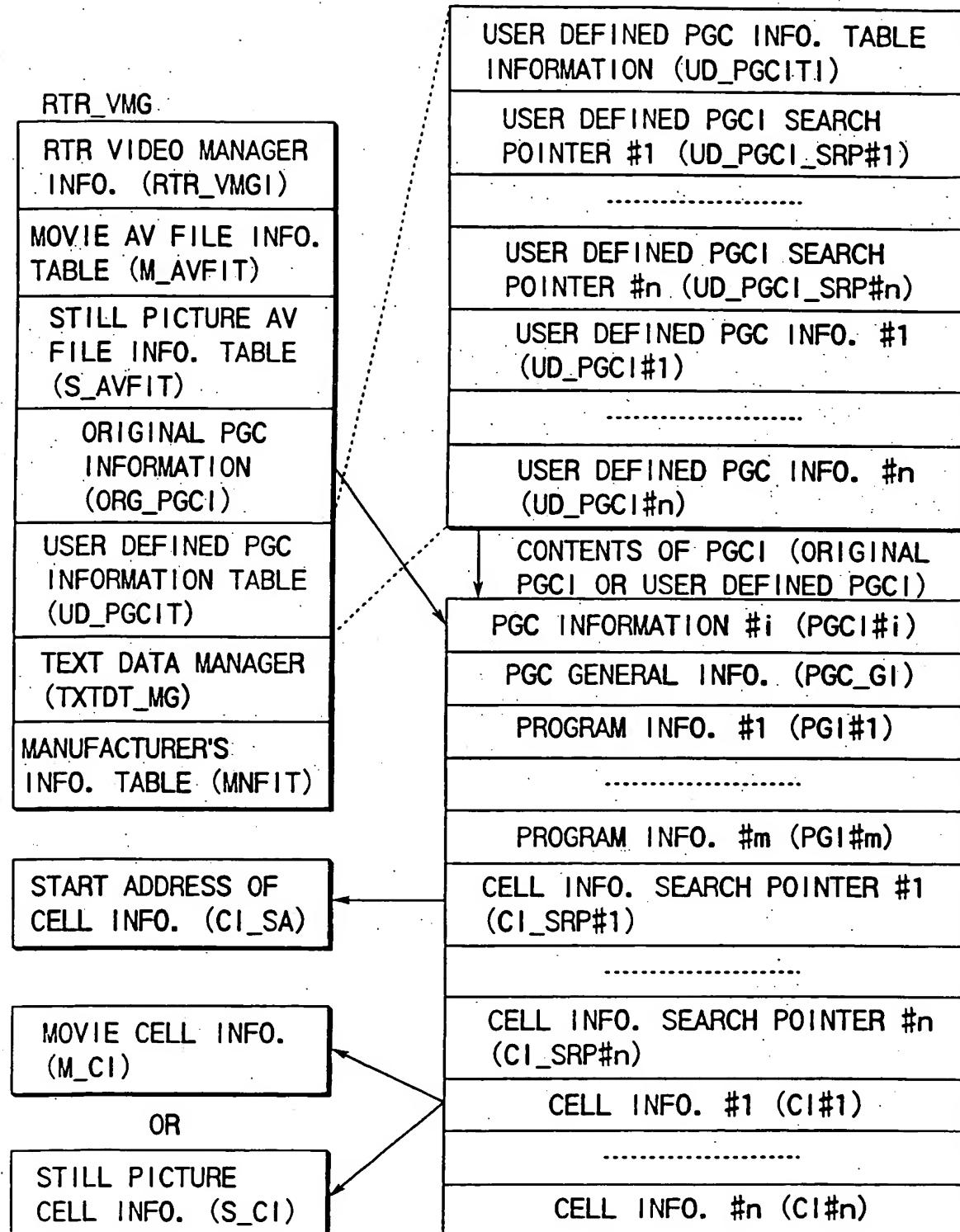


FIG. 23

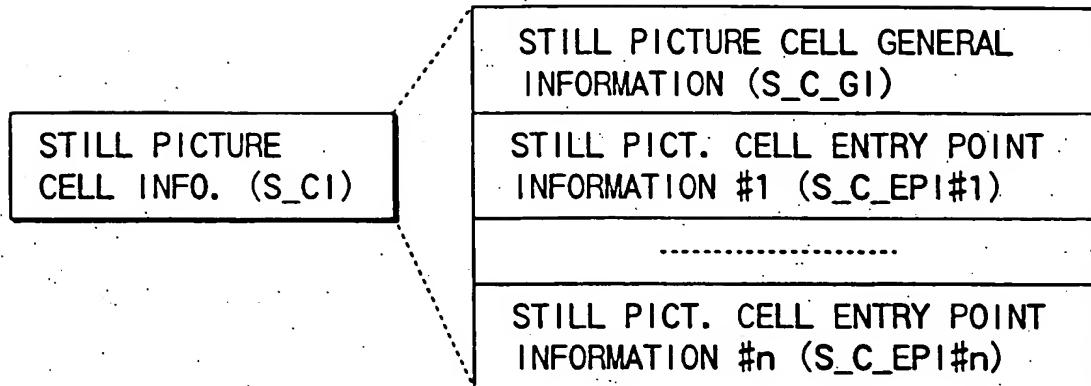


FIG.24

CONTENTS OF S_C_GI

FIELD NAME	CONTENTS
RESERVED	RESERVED
C_TY	CELL TYPE
S_VOGI_SRPN	S_VOGI SEARCH POINTER NUMBER
C_EPI_Ns	NUMBER OF CELL ENTRY POINT INFO.
S_S_VOB_ENTN	START S_VOB_ENT NUMBER
E_S_VOB_ENTN	END S_VOB_ENT NUMBER

FIG.25

CONTENTS OF S_C_EPI

FIELD NAME	CONTENTS
EP_TY	ENTRY POINT TYPE
S_VOB_ENTN	S_VOB_ENT NUMBER
PRM_TXTI	PRIMARY TEXT INFORMATION

FIG.26

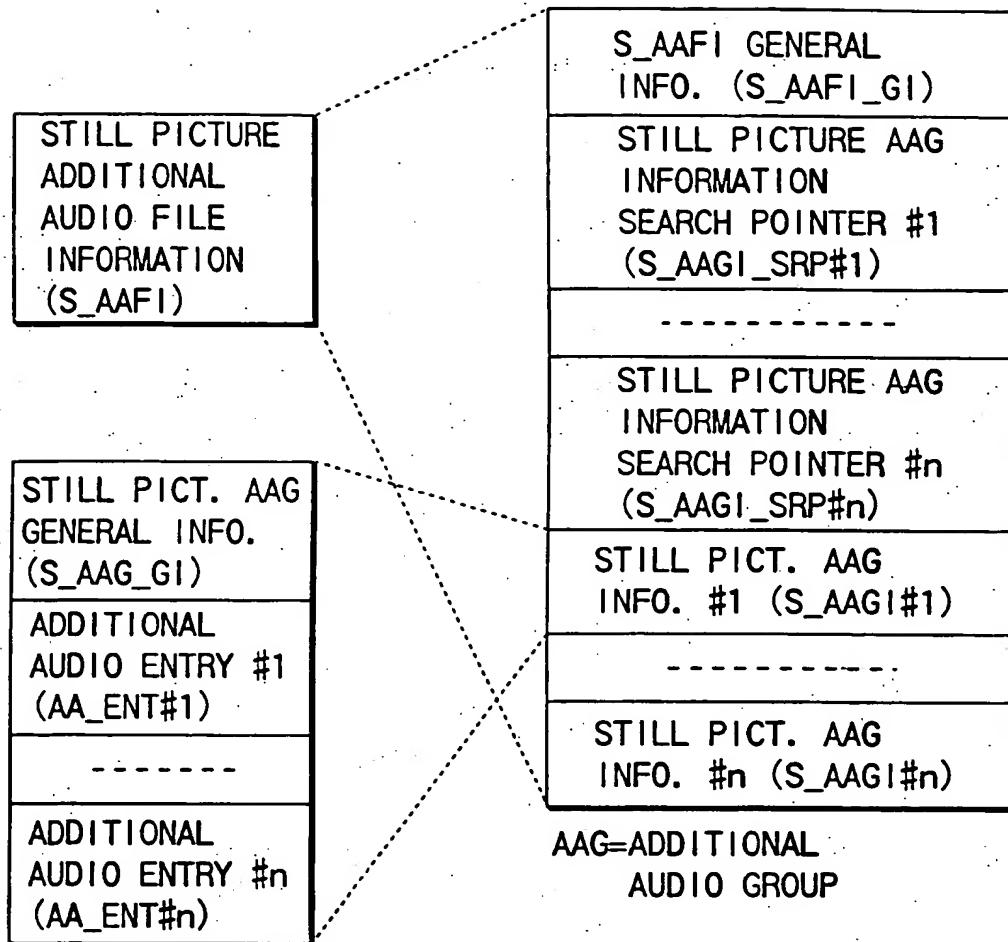


FIG. 27

CONTENTS OF S_AAG_GI

FIELD NAME	CONTENTS
AA_ENT_Ns	NUMBER OF AA_ENT
S_AA_STIN	STILL PICTURE ADDITIONAL AUDIO STREAM INFORMATION NUMBER
S_AAG_SA	START ADDRESS OF THIS AAG IN STILL PICTURE ADDITIONAL AUDIO FILE

FIG. 28

CONTENTS OF AA_ENT

FIELD NAME	CONTENTS
AA_TY	ADDITIONAL AUDIO TYPE
AA_SZ	SIZE OF ADDITIONAL AUDIO STREAM
AA_PB_TM	PLAYBACK TIME OF ADDITIONAL AUDIO STREAM (MEASURED BY VIDEO FIELDS)

FIG. 29

CONTENTS OF S_VOG_GI

FIELD NAME	CONTENTS
S_VOB_Ns	NUMBER OF S_VOBs
S_VOB_STIN	STILL PICTURE VOB STREAM INFORMATION NUMBER
FIRST_VOB_REC_TM	TIME WHEN THE FIRST VOB IN THIS VOB GROUP WAS RECORDED
LAST_VOB_REC_TM	TIME WHEN THE LAST VOB IN THIS VOB GROUP WAS RECORDED
S_VOG_SA	START ADDRESS OF THIS VOB GROUP IN STILL PICTURE AV FILE

FIG. 30

CONTENTS OF S_VOB_ENT (TYPE 1)

FIELD NAME	CONTENTS
S_VOB_ENT_TY	STILL PICTURE VOB ENTRY TYPE
V_PART_SZ	SIZE OF VIDEO PART

FIG. 31

CONTENTS OF S_VOB_ENT (TYPE 2)

FIELD NAME	CONTENTS
S_VOB_ENT_TY	STILL PICTURE VOB ENTRY TYPE
V_PART_SZ	SIZE OF VIDEO PART
A_PART_SZ	SIZE OF ORIGINAL AUDIO PART
A_PB_TM	PLAYBACK TIME OF AUDIO PART (DESCRIBED IN VIDEO FIELDS)

FIG. 32

CONTENTS OF S_VOB_ENT (TYPE 3)

FIELD NAME	CONTENTS
S_VOB_ENT_TY	STILL PICTURE VOB ENTRY TYPE
V_PART_SZ	SIZE OF VIDEO PART
S_AAGN	ADDITIONAL AUDIO GROUP NUMBER
AA_ENTN	AA_ENT NUMBER

FIG. 33

CONTENTS OF S_VOB_ENT (TYPE 4)

FIELD NAME	CONTENTS
S_VOB_ENT_TY	STILL PICTURE VOB ENTRY TYPE
V_PART_SZ	SIZE OF VIDEO PART
A_PART_SZ	SIZE OF ORIGINAL AUDIO PART
A_PB_TM	PLAYBACK TIME OF AUDIO PART
S_AAGN	ADDITIONAL AUDIO GROUP NUMBER
AA_ENTN	AA_ENT NUMBER

FIG. 34

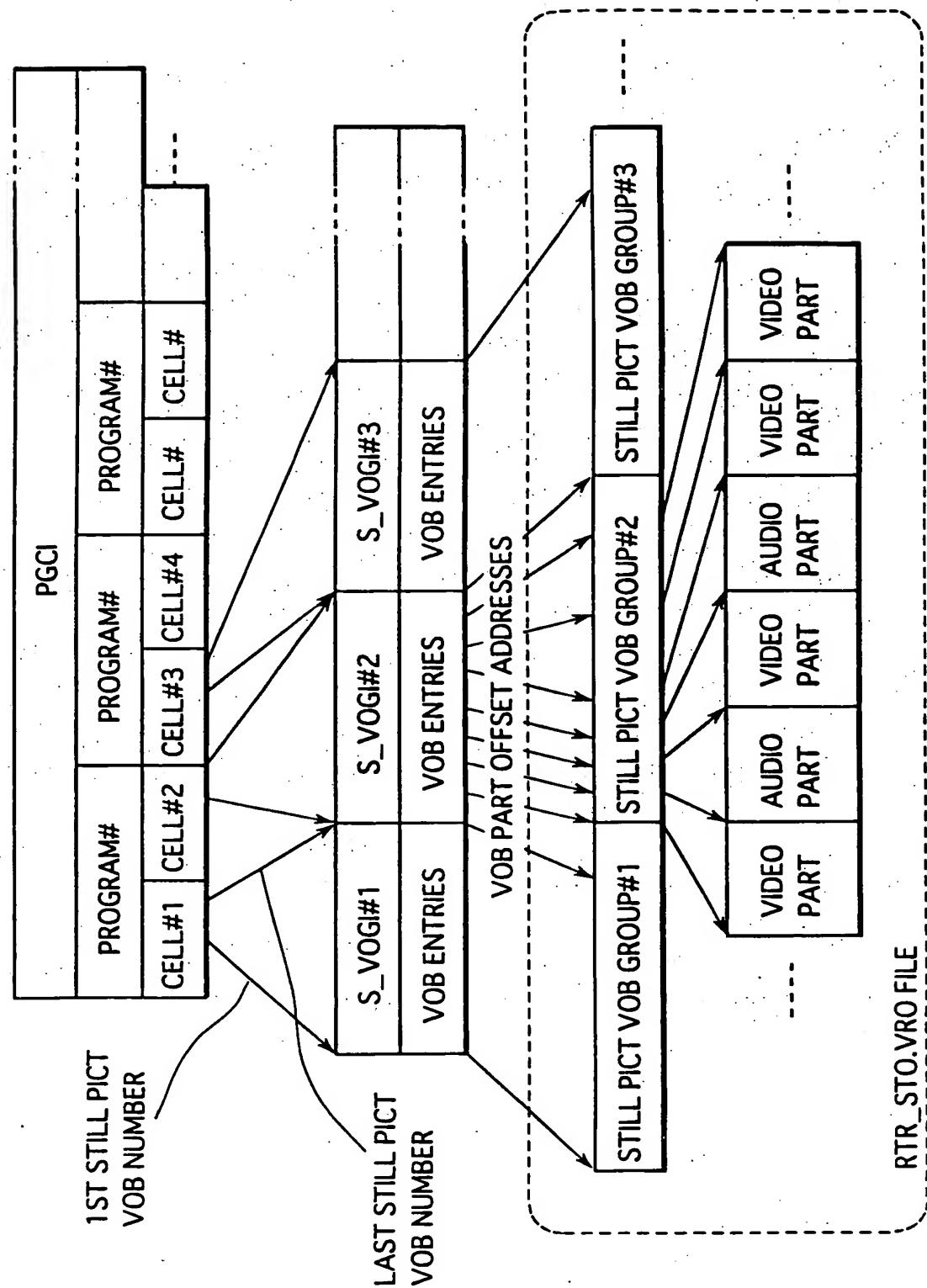


FIG. 35

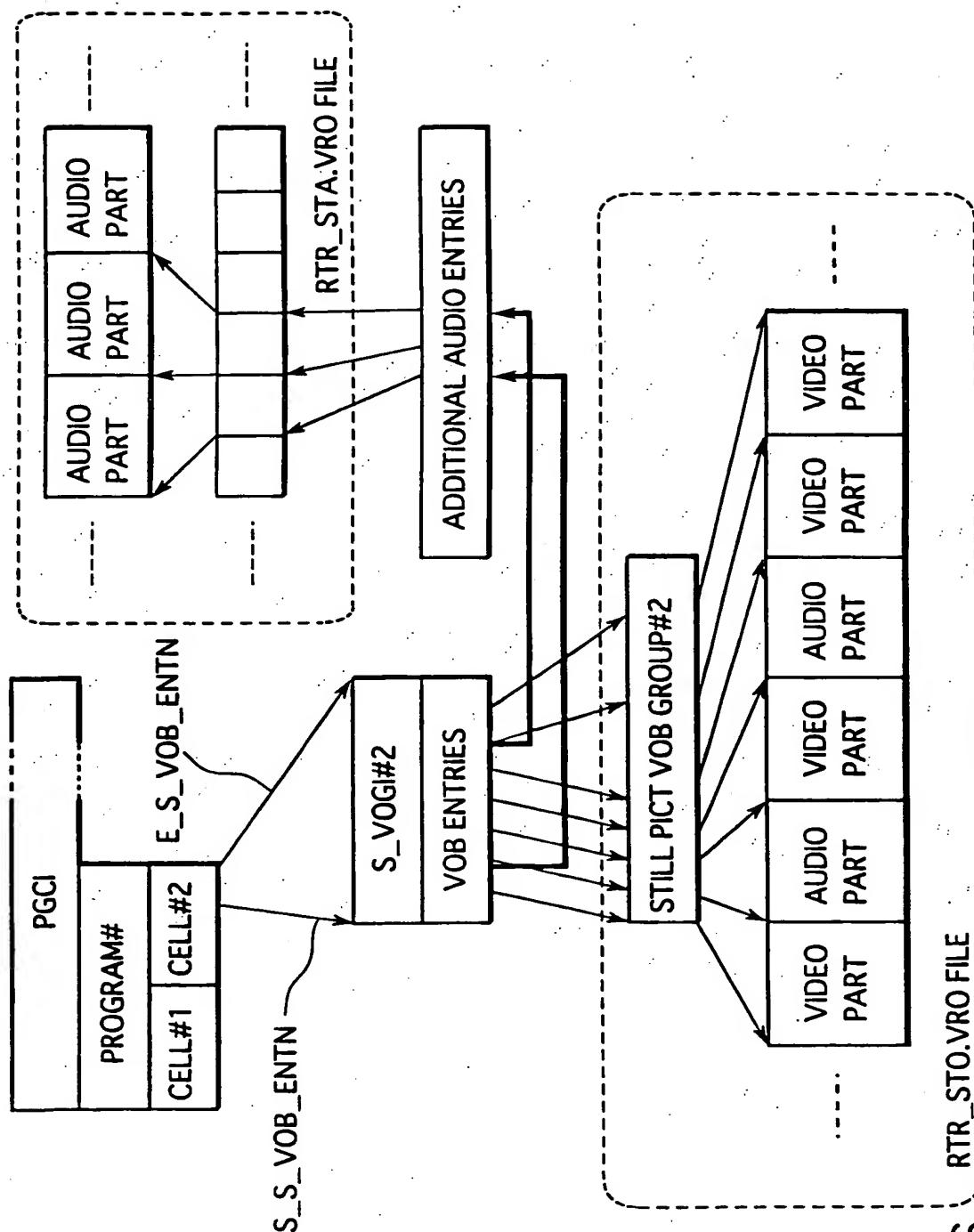


FIG. 36
RTR_STA.VRO FILE

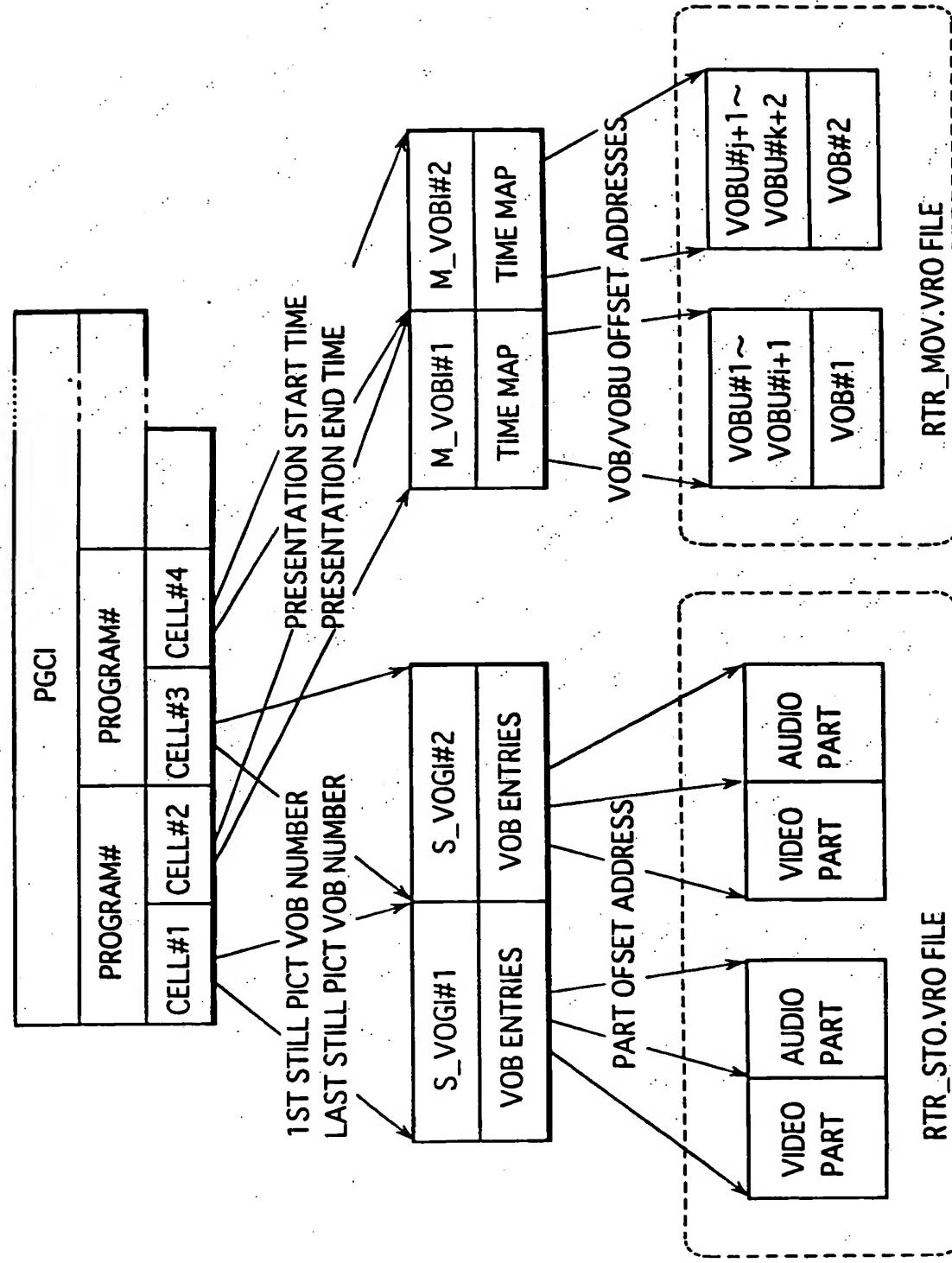


FIG. 37

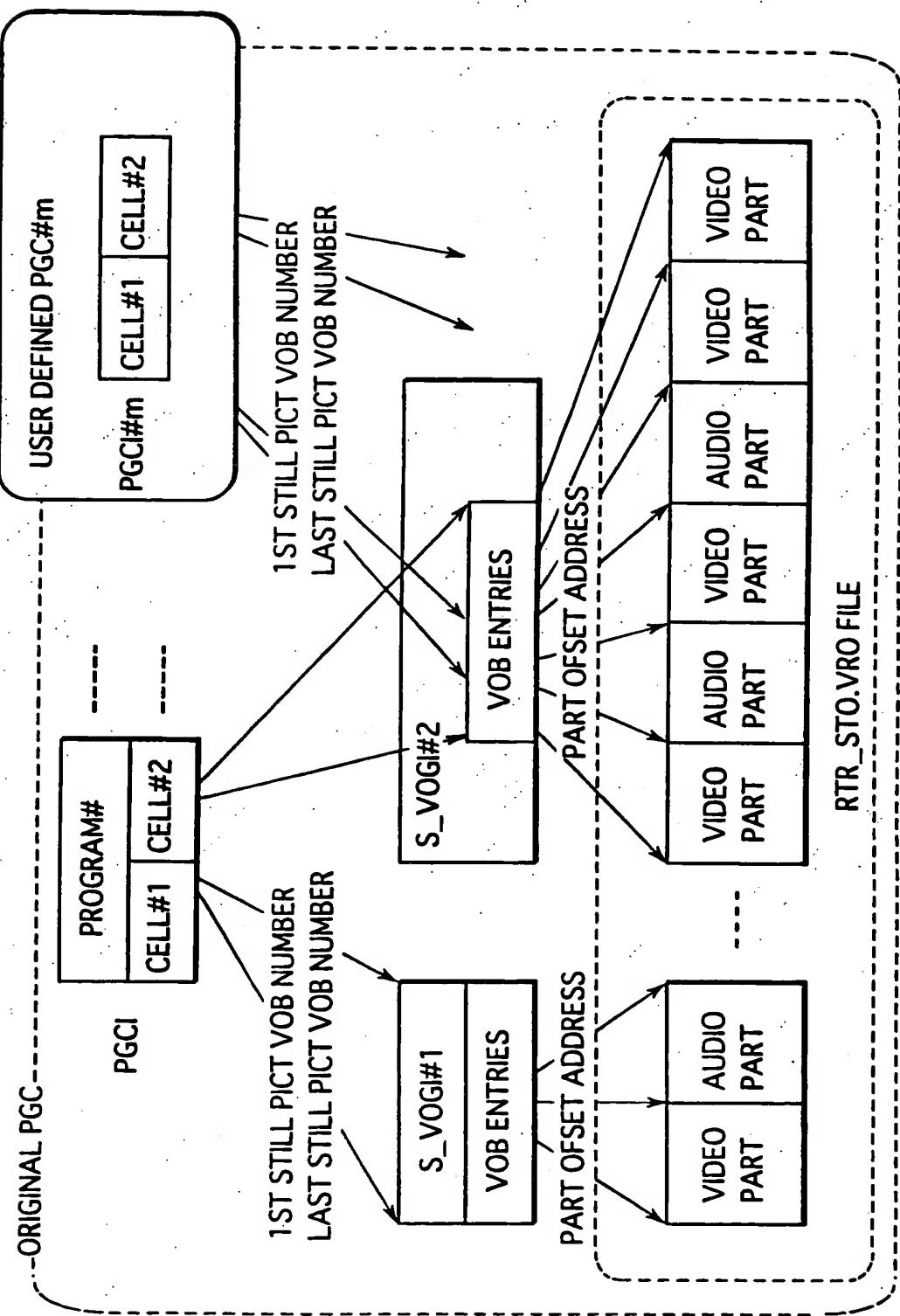


FIG. 38